

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A holographic recording method for recording information as phase information of light by projecting a signal beam and a reference beam onto a recording medium, wherein an X direction is defined as the direction of a line of intersection between a plane including the optical axes of the signal beam and reference beam (incidence plane) and the recording plane of the recording medium, and the Y direction is defined as the direction of a line lying normal to the incidence plane and intersecting said line of intersection, comprising the steps of:

using the reference beam modulated with a first phase code to record a first hologram at a predetermined position; ~~and~~

using the reference beam modulated with a second phase code whose pattern is different from that of the first phase code to record at a position shifted in the Y direction a second hologram that partially overlaps the first hologram; and

using the reference beam modulated with a third phase code whose pattern is different from that of the first and second phase codes to record at a position shifted in the Y direction a third hologram that partially overlaps the first and second holograms wherein a correlation between the third phase code and the second phase code is set lower than a correlation between the third phase code and the first phase code.

2. (Canceled)

3. (Currently Amended) ~~A~~ The holographic recording method in accordance with Claim 1 including a step of using the reference beam modulated with the first phase code to

record at a position shifted to the X direction a fourth hologram that partially overlaps the first hologram.

4-5. (Canceled)

6. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~5~~1, wherein phase codes ~~used in the phase code multiplexing have~~having lower correlation with ~~increasing overlap between two holograms recorded by shift multiplexing in the Y direction~~the first phase code are employed as the second phase code as overlap between the first hologram and the second hologram increases.

7. (Canceled)

8. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~6~~1, wherein orthogonal phase codes are used for ~~holograms~~the first hologram and the second hologram adjacent along the Y direction.

9-14. (Canceled)

15. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~11~~3, wherein ~~the same phase code is~~orthogonal phase codes are used for ~~holograms recorded~~the first hologram and the second hologram adjacent along the ~~X-Y~~Y direction.

16. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~12~~6, wherein ~~the same phase code is~~orthogonal phase codes are used for ~~holograms~~the first hologram and the second hologram recorded ~~adjacent~~along the ~~X-Y~~Y direction.

17-18. (Canceled)

19. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~113~~, wherein two or more different phase codes are used for ~~holograms~~ the first hologram and the fourth hologram recorded along the X direction.

20. (Currently Amended) ~~A-The~~ holographic recording method in accordance with Claim ~~126~~, wherein two or more different phase codes are used for ~~holograms~~ the first hologram and a fourth hologram recorded along the X direction.

21. (Canceled)

22. (Currently Amended) ~~A-The~~ holographic recording device for recording information as phase information of light by projecting a signal beam and a reference beam onto a recording medium comprising:

a laser beam source;

a beam splitter for dividing the beam from the laser beam source;

a spatial light modulator for generating ~~a-the~~ signal beam containing information by modulating the intensity of one divided beam;

a phase spatial light modulator for generating ~~a-the~~ reference beam by modulating the phase of the other divided beam with a predetermined phase code; and

a controller for controlling the incidence position of the signal beam and reference beam on the recording medium wherein,

an X direction is defined as the direction of a line of intersection between an incidence plane including the optical axes of the signal beam and reference beam and the recording plane of the recording medium,

a Y direction is defined as the direction of a line perpendicular to the incidence plane,

~~and the controller records holograms by shift multiplexing at least in the Y direction and using phase code multiplexing in combination with the shift multiplexing in the Y~~

direction is adapted to use the reference beam modulated with a first phase code to record a first hologram at a predetermined position,

use the reference beam modulated with a second phase code having a pattern different from a pattern of the first phase code to record at a position shifted in the Y direction a second hologram that partially overlaps the first hologram, and

use the reference beam modulated with a third phase code having a pattern different from that of the first and second phase codes to record at a position shifted in the Y direction a third hologram that partially overlaps the first and second holograms wherein a correlation between the third phase code and the second phase code is set lower than a correlation between the third phase code and the first phase code.

23. (Currently Amended) A-The holographic recording method comprising:  
projecting a signal beam and a reference beam onto a recording medium;  
modulating the reference beam with a first phase code to generate a first hologram;  
recording the first hologram at a first position;  
modulating the reference beam with a second phase code having a pattern  
different from that than a pattern of the first phase code to generate a secured-second hologram;  
recording the second hologram at a second position shifted in a radial direction  
relative to the first position so that the second hologram partially overlaps the first hologram; ~~and~~  
modulating the reference beam with a third phase code having a pattern different  
from ~~that the patterns~~ of the first and second phase codes to generate a third hologram; and  
recording the third hologram at a third position shifted in a radial direction  
relative to the first and second positions so that the third hologram partially overlaps the first and  
second holograms wherein a correlation between the third phase code and the second phase code  
is set lower than a correlation between the third phase code and the first phase code.

24. (Previously Presented) The holographic recording method of claim 23, further comprising:

shifting a fourth hologram in a track direction to partially overlap the first hologram.

25. (New) The holographic recording method of claim 15 wherein two or more different phase codes are used for the first hologram and the fourth hologram recorded along the X direction.